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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/785,104	02/16/01	FJELSTAD	J TESSERA 3.0-

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MM71/0606

EXAMINER

QUINTO, K

ART UNIT

PAPER NUMBER

2826

DATE MAILED:

06/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary	Applicati n N .	Applicant(s)	
	09/785,104	FJELSTAD, JOSEPH	
	Examiner	Art Unit	
	Kevin Quinto	2826	

-- The MAILING DATE of this communication appears on the cov r sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2001 .
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- | | |
|---|---|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 20) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities: the use of the phrases “section disposed near to said front surface” and “section remote from said front surface.” The phrase “section disposed near to said front surface” could be interpreted as a lower section of the lead which faces the body. The phrase “section remote from said front surface” could be interpreted as an upper section of the lead which faces away from the body. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Jordan.

(USPN 3,747,202)

4. Regarding claim 1, Jordan (USPN 3,747,202) discloses in figure 5 a device which meets the claim. There is a body (11) which has a front surface. There is an adherent material (56) made of molybdenum which functions as a bonding pad. It is exposed at a front surface (53). A lead (50) is connected to the pad (56). Portion (52) of the lead (50) is the pad end. The other portion (55) of the lead (50) is the tip end. The lead (50) is projecting over the front surface (53)

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of the body (54). There is a space between the lead (50) and the body (54). Since the leads (50) are gold, the examiner considers them to be flexible and independently movable with respect to the body (54). It is understood that there is a plurality of leads and pads disposed upon the body.

5. In reference to claim 2, figure 5 of Jordan shows that the lead (50) is supported only at a pad (56) connected to it. The lead (50) extends as a cantilever beam over the front surface (53) of the body (54).

6. In reference to claim 4, figure 5 of Jordan shows that the lead (50) has an elongated, striplike main region with substantially flat main surfaces. A first main surface faces the body while a second main surface faces away from the body.

7. With regard to claim 5, figure 5 of Jordan shows that a main region of the lead (50) is generally parallel to the front surface (53) of the body (54).

8. With regard to claims 6 and 7, the lead has a portion (52) near the front surface (53) of the body (54) and another portion (55) which is remote from the body (54). The tip of the lead (50) is remote from the front surface (53) of the body (54).

9. In reference to claim 8, the body (54) of figure 5 in Jordan is a substrate or semiconductor chip/wafer.

10. Claims 1, 2, 4-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakahara et al. (USPN 5,110,762).

11. So far as understood in claim 1, Nakahara et al. (USPN 5,110,762, hereinafter referred to as the "Nakahara" reference) discloses in figure 13 a device which meets the claim. There is a body (200) having a front surface with an exposed pad (202). There is a lead (201) disposed on top of the pad (202). The end of the lead on the pad (20) is the pad end, and the end disposed

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over the surface of the body is the tip end. The tip end is suspended over a front surface of the body. There is a space between the lead (201) and the body (200). It is understood that the lead (201) is metal, a material which the examiner considers to be flexible and independently movable with respect to the body (200). It is also understood that there is a plurality of leads and pads disposed upon the body.

12. In reference to claim 2, figure 13 of Nakahara shows that the lead (201) extends as a cantilever beam over the body (200). The lead (201) is supported only at a pad (202) connected to it.

13. Claim 4 states that the lead has a striplike main region with substantially flat main surfaces. A first main surface faces the body. A second main surface faces away from the body. Figure 13 of Nakahara shows that the lead (201) is striplike with substantially flat main surfaces. One surface faces the body (200) and the other surface faces away from the body (200).

14. With regard to claim 5, figure 13 of Nakahara shows a lead (201) with a main region that is generally parallel to the front surface of the body (200).

15. In reference to claim 6, figure 13 of Nakahara shows a lead (201) with an upper section which faces away and is remote from the body (200). The lead (201) also has a lower section which faces towards and is near the body (200).

16. In reference to claim 8, it is understood that the substrate (200) in figure 13 of Nakahara is part of a semiconductor chip.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 3 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. (USPN 5,110,762) in view of Smith et al. (USPN 5,830,782).

19. In reference to claim 3, Nakahara discloses a lead structure for use in semiconductor devices. However, Nakahara does not disclose bending the lead structure in a plane parallel to a front surface of the body. The device of Smith et al. (USPN 5,830,782, hereinafter referred to as the "Smith" reference) discloses a structure with leads bent on a plane parallel to a front surface of the body. These leads permit movement of the terminals relative to the contacts on the chip or microelectronic element (column 5, lines 40-43). One would be motivated to bend terminals in this manner so as to gain this benefit in a semiconductor package. Therefore it would be obvious to bend the leads, disclosed by Nakahara, in a plane parallel to a front surface of the body.

20. Regarding claim 9, Nakahara discloses a lead structure for use in semiconductor devices. However, Nakahara does not disclose placing the lead on a peripheral region of a semiconductor chip so that the tip ends extend over the central region of the semiconductor chip. It is well known in the art to position leads in this manner as seen in Smith. Figure 5 of Smith discloses a structure with leads having tips which extend over the central portion of the semiconductor chip. It would be obvious to use the leads of Nakahara in the Smith device because the Smith device requires leads in order for it to function.

21. In reference to claim 10, Smith states that the body may be a wafer having a plurality of chips (column 6, lines 2-4). The device of Smith which uses the leads of Nakahara inherently meets the claim.

22. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara (USPN 5,110,762) in view of McCormick. (USPN 5,639,385).

23. Claim 11 cites the limitations of claim 1 in addition to the added limitation that the body is a probe card. Nakahara meets the limitations of claim 1 as stated above. It is well known in the art that wafer probe cards utilize leads that extend as cantilevers. This can be seen in figure 9c of McCormick. The probe lead (850) extends as a cantilever over the surface of the probe card. One would be motivated to use the leads of Nakahara in the device of McCormick because McCormick requires leads, such as those in Nakahara, that extend as a cantilever over the body to which it is attached. It would therefore be obvious to use the leads disclosed in Nakahara in the device of McCormick because the leads required in McCormick must extend in the same manner as Nakahara.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (703) 306-5688. The examiner can normally be reached on M-F 8AM-5PM.

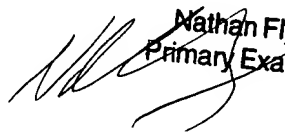
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

KVQ
June 4, 2001


Nathan Flynn
Primary Examiner